THE BRAIN: UNDERSTANDING NEUROBIOLOGY THROUGH THE STUDY OF ADDICTION		
Ohio Academic Standards for Life Science - Grade 10		
Lesson	**Standard**	**Description**
2, 3	**1.b**	Explain that living cells are the basic unit of structure and function of all living things.
2, 3	**3.a**	Explain the characteristics of life as indicated by cellular processes including homeostasis.
1, 2, 3	**3.c**	Explain the characteristics of life as indicated by cellular processes including transportation of molecules.
1, 2, 3	**4**	Summarize the general processes of cell division and differentiation, and explain why specialized cells are useful to organisms and explain that complex multicellular organisms are formed as highly organized arrangements of differentiated cells.
5	**7**	Describe that spontaneous changes in DNA are mutations, which are a source of genetic variation. When mutations occur in sex cells, they may be passed on to future generations; mutations that occur in body cells may affect the functioning of that cell or the organism in which that cell is found.
All lessons	**11**	Explain that living organisms use matter and energy to synthesize a variety of organic molecules (e.g., proteins, carbohydrates, lipids and nucleic acids) and to drive life processes (e.g., growth, reacting to the environment, reproduction and movement).
4, 5	**13**	Explain that the variation of organisms within a species increases the likelihood that at least some members of a species will survive under gradually changing environmental conditions.
3, 4, 5	**15**	Explain how living things interact with biotic and abiotic components of the environment (e.g., predation, competition, natural disasters and weather).
4, 5	**21**	Explain that natural selection provides the following mechanism for evolution; undirected variation in inherited characteristics exist within every species. These characteristics may give individuals an advantage or disadvantage compared to others in surviving and reproducing. The advantaged offspring are more likely to survive and reproduce. Therefore, the proportion of individuals that have advantageous characteristics will increase. When an environment changes, the survival value of some inherited characteristics may change.
1, 3, 4, 5	**27**	Describe advances in life sciences that have important long-lasting effects on science and society (e.g., biological evolution, germ theory, biotechnology and discovering germs).
1, 3, 4, 5	**28**	Analyze and investigate emerging scientific issues (e.g., genetically modified food, stem cell research, genetic research and cloning).

Ohio Academic Standards for Science and Technology – Grade 10		
Lesson	**Standard**	**Description**
1, 4	**1**	Cite examples of ways that scientific inquiry is driven by the desire to understand the natural world and how technology is driven by the need to meet human needs and solve human problems.
1, 4, 5	**2**	Describe examples of scientific advances and emerging technologies and how they may impact society.
Ohio Academic Standards for Scientific Inquiry – Grade 10		
2, 3, 4, 5	**2**	Present scientific findings using clear language, accurate data, appropriate graphs, tables, maps and available technology.
2, 3, 4	**3**	Use mathematical models to predict and analyze natural phenomena.
2, 3, 4, 5	**4**	Draw conclusions from inquiries based on scientific knowledge and principles, the use of logic and evidence (data) from investigations.
4	**5**	Explain how new scientific data can cause any existing scientific explanation to be supported, revised or rejected.
Ohio Academic Standards for Scientific Ways of Knowing – Grade 10		
1, 3, 4, 5	**1**	Discuss science as a dynamic body of knowledge that can lead to the development of entirely new disciplines.
1, 3, 4, 5	**2**	Describe that scientists may disagree about explanations of phenomena, about interpretation of data or about the value of rival theories, but they do agree that questioning, response to criticism and open communication are integral to the process of science.
1, 3, 4, 5	**3**	Recognize that science is a systematic method of continuing investigation, based on observation, hypothesis testing, measurement, experimentation, and theory building, which leads to more adequate explanations of natural phenomena.
3, 4, 5	**4**	Recognize that ethical considerations limit what scientists can do.
3, 5	**5**	Recognize that research involving voluntary human subjects should be conducted only with the informed consent of the subjects and follow rigid guidelines and/or laws.
4	**6**	Recognize that animal-based research must be conducted according to currently accepted professional standards and laws.

Ohio Academic Standards for English Language Arts – Grade 10		
Lesson	**Standard**	**Description**
1, 2, 3	**Vocabulary 6**	Determine the meanings and pronunciations of unknown words by using dictionaries, glossaries, technology and textual features, such as definitional footnotes or sidebars.
All lessons	**Reading Process 1**	Apply reading comprehension strategies, including making predictions, comparing and contrasting, recalling and summarizing and making inferences and drawing conclusions.
All lessons	**Reading Applications 3**	Evaluate the effectiveness of information found in maps, charts, tables, graphs, diagrams, cutaways and overlays.
2, 3, 4, 5	**Writing Process 6**	Organize writing to create a coherent whole with an effective and engaging introduction, body and conclusion, and a closing sentence that summarizes, extends or elaborates on points or ideas in the writing.
2, 3, 4, 5	**Writing Process 12**	Add and delete information and details to better elaborate on stated central idea and more effectively accomplish purpose.
2, 3, 4, 5	**Writing Applications 4.b, 4.d**	Write informational essays or reports, including research that: provide a clear and accurate perspective on the subject and support the main ideas with facts, details, examples and explanations from sources.
3, 4, 5	**Research 1**	Compose open-ended questions for research, assigned or personal interest, and modify questions as necessary during inquiry and investigation to narrow the focus or extend the investigation.
2, 3, 4, 5	**Research 4**	Evaluate and systematically organize important information, and select appropriate sources to support central ideas, concepts and themes.
Ohio Academic Standards for Mathematics – Grade 10		
Lesson	**Standard**	**Description**
2, 3, 4	**Data Analysis and Probability 3**	Display bivariate data where at least one variable is categorical.
4, 5	**Data Analysis and Probability 5**	Provide examples and explain how a statistic may or may not be an attribute of the entire population; e.g., intentional or unintentional bias may be present.
4, 5	**Data Analysis and Probability 8**	Differentiate and explain the relationship between the probability of an event and the odds of an event, and compute one given the other.